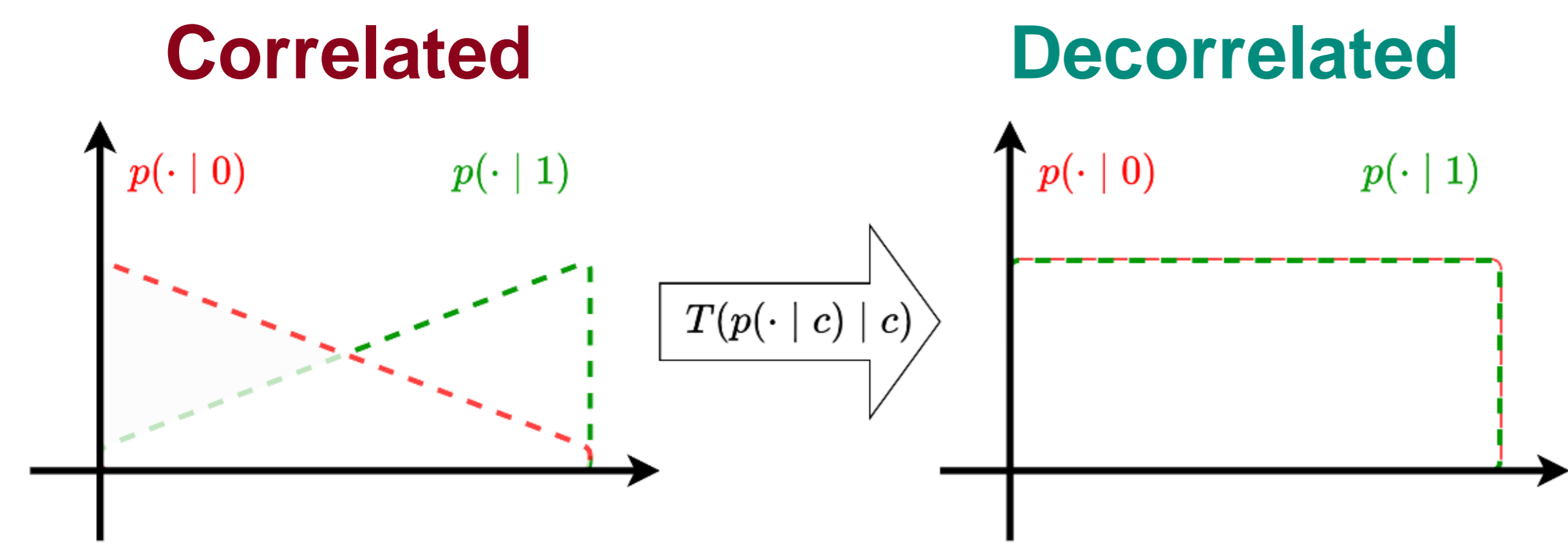


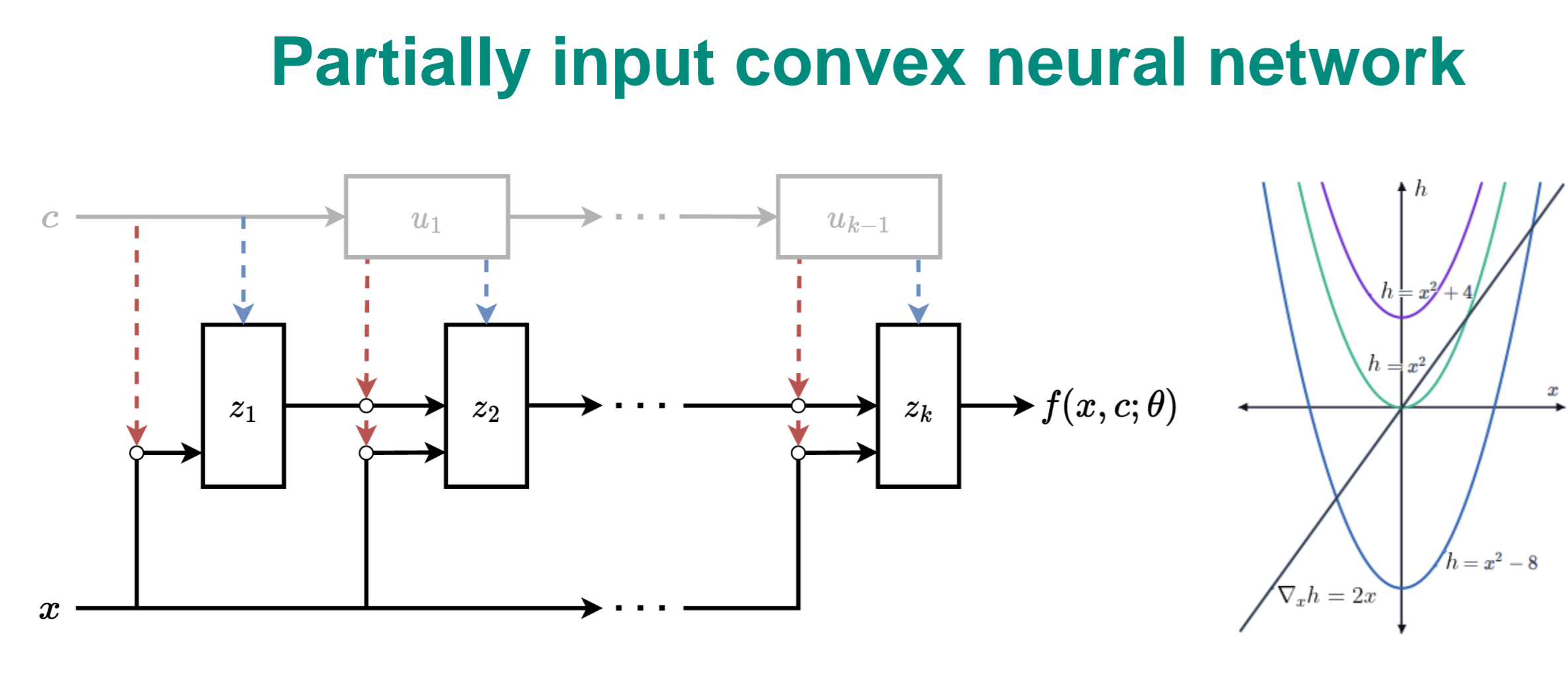
Optimal transport:

Correlated classifier $p(\cdot | c)$:



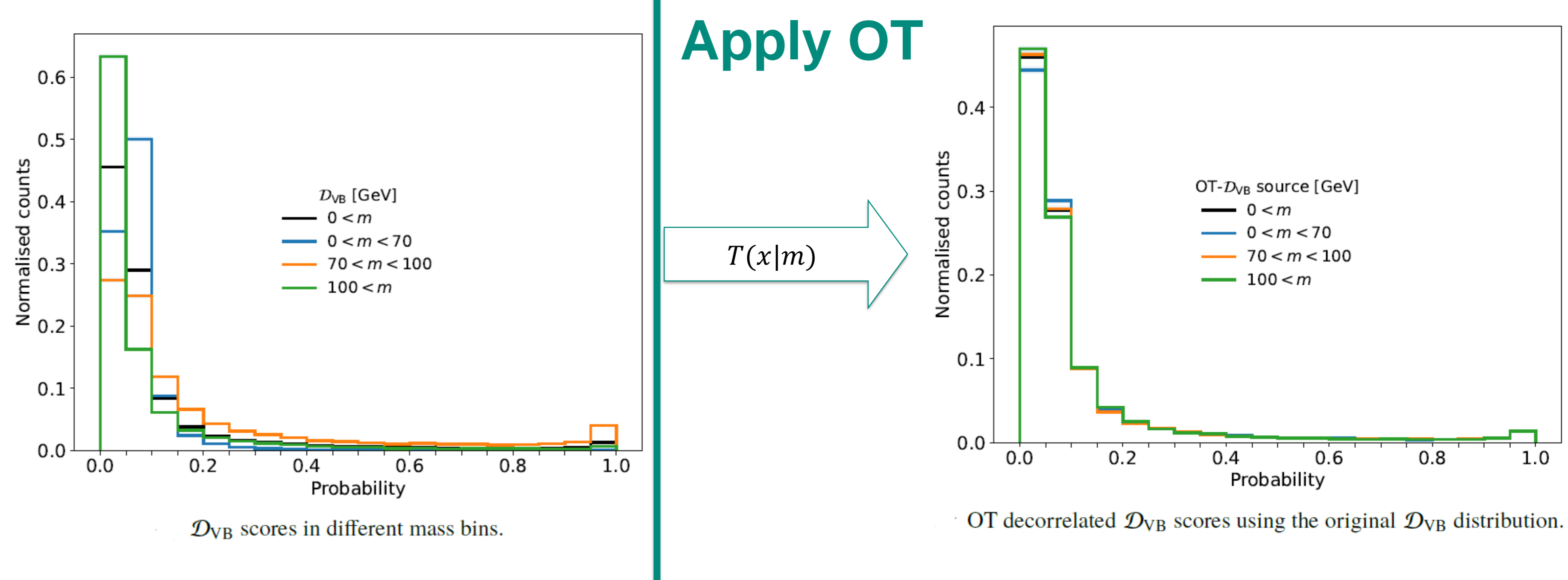
Transforming $p(\cdot | c)$ to be independent of c , the classifier scores become decorrelated with c .

To find $T(\cdot | c)$, we solve the dual formulation of *optimal transport* using two PICNN.

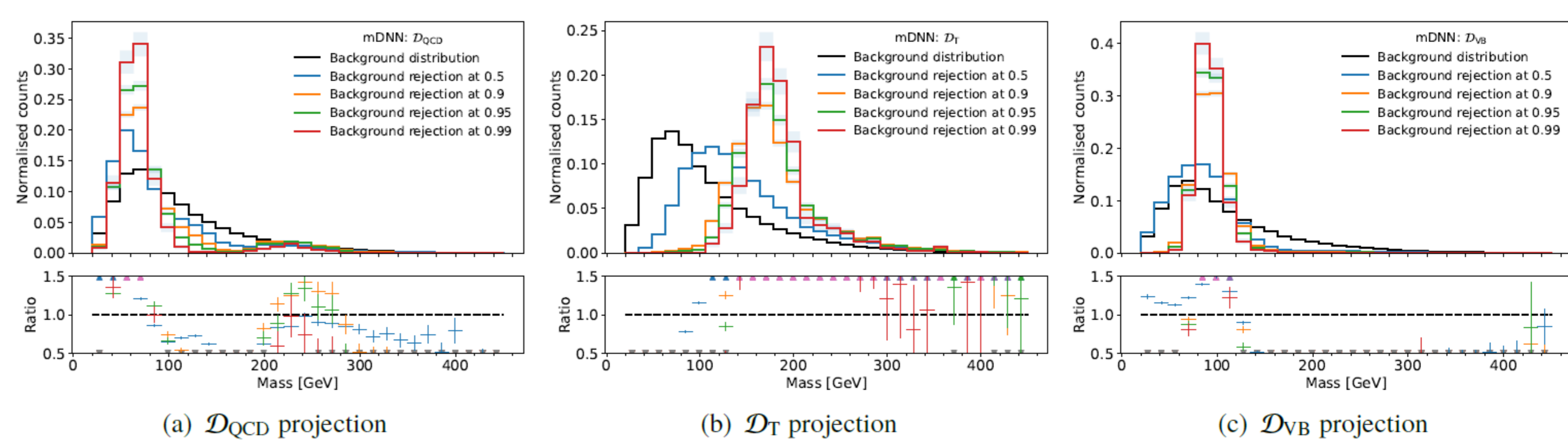


Correlated multiclass classifier

We have trained a classifier on QCD, VB and Top



Resulting in mass sculpting:

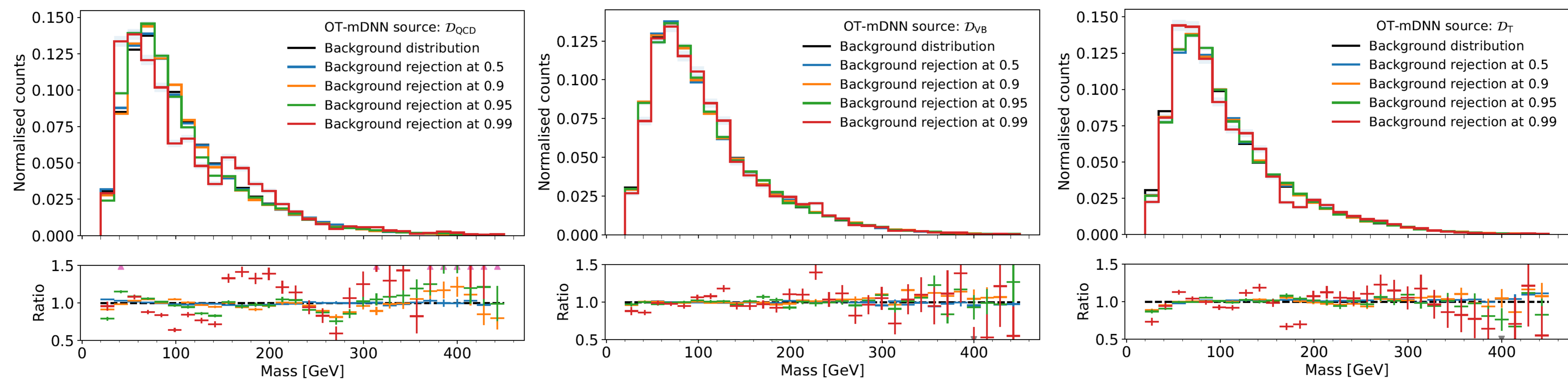


Results

After decorrelation we have reduced the mass sculpting

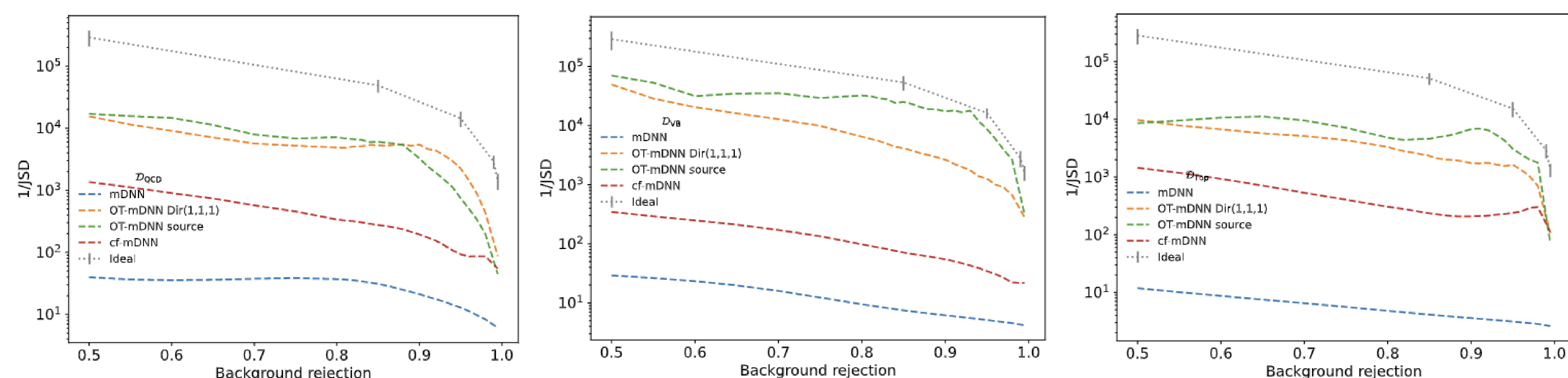
Arbitrary projections:

$$D_{QCD} = \frac{p_{QCD}}{p_T + p_{VB}}, D_{VB} = \frac{p_{VB}}{p_T + p_{QCD}}, D_T = \frac{p_T}{p_{QCD} + p_{VB}}$$



Mass sculpting at varying working point:

We can do a scan over multiple background rejection to see the behavior:



Link to paper

